

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 January 2005 (13.01.2005)

PCT

(10) International Publication Number
WO 2005/003641 A2

(51) International Patent Classification⁷: **F24H**

(21) International Application Number:
PCT/US2004/021499

(22) International Filing Date: 2 July 2004 (02.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0315576.9 4 July 2003 (04.07.2003) GB
0412114.1 29 May 2004 (29.05.2004) GB

(71) Applicant (for ZW only): **PATCH, Robert, J.** [US/US];
4106 Leland Street, Chevy Chase, MD 20815 (US).

(71) Applicant and

(72) Inventor: **THOMA, Christian, Helmut** [DE/GB]; Chalet
Abaco, Green Road, St. Clement, Jersey JE2 6QA (GB).

(74) Agent: **CASTEL, Benoit**; Young & Thompson, Suite 200,
745 South 23rd Street, Arlington, VA 22202 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

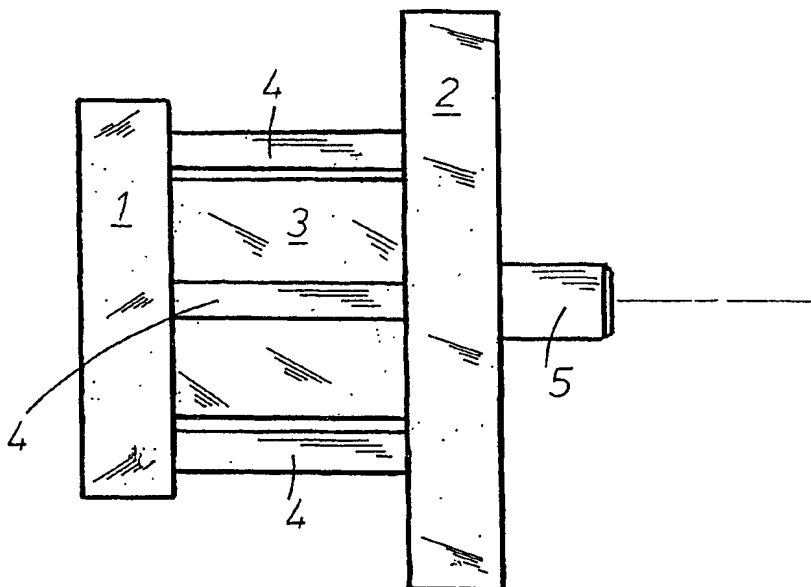
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR HEATING FLUIDS



(57) Abstract: An apparatus for heating a liquid comprising a housing having an internal chamber and a rotor disposed in said chamber. The rotor is preferably cylindrical and operates inside a bore provided by the housing without touching, the shape of the bore preferably being parallel with the exterior surface of the rotor, and a series of openings disposed over the rotor surface. At least one internal passageway in the rotor and means for: pre-heating some or all the incoming fluid in the chamber; priming the chamber initially; cooling certain temperature sensitive components; injecting fluid into a partially evacuated volume; developing a vacuum state during operation expeditiously.

WO 2005/003641 A2



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.